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Report Card on the Diet Quality of Children

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The diet quality of children and adolescents steadily declines as they get older. This decline in diet quality is a concern—poor eating patterns established in childhood usually transfer to adulthood. Such patterns, as well as inactivity among American children, are major factors in the increasing rate of obesity over the past decades. This *Nutrition Insight* uses the Healthy Eating Index (HEI) to examine the diet of American children ages 2 to 18 to identify the components of their diet that contribute to this deterioration. Data used for analysis are from the U.S. Department of Agriculture's (USDA) 1994-96 Continuing Survey of Food Intakes by Individuals, a nationally representative survey containing information on the diets of about 5,000 children.

Healthy Eating Index: How It Is Computed

The HEI, computed on a regular basis by USDA, is a summary measure of people's diet quality. The HEI provides an overall picture of the type and quantity of foods people eat, their compliance with specific dietary recommendations, and the variety in their diets. The Index consists of 10 components, each representing different aspects of a healthful diet.

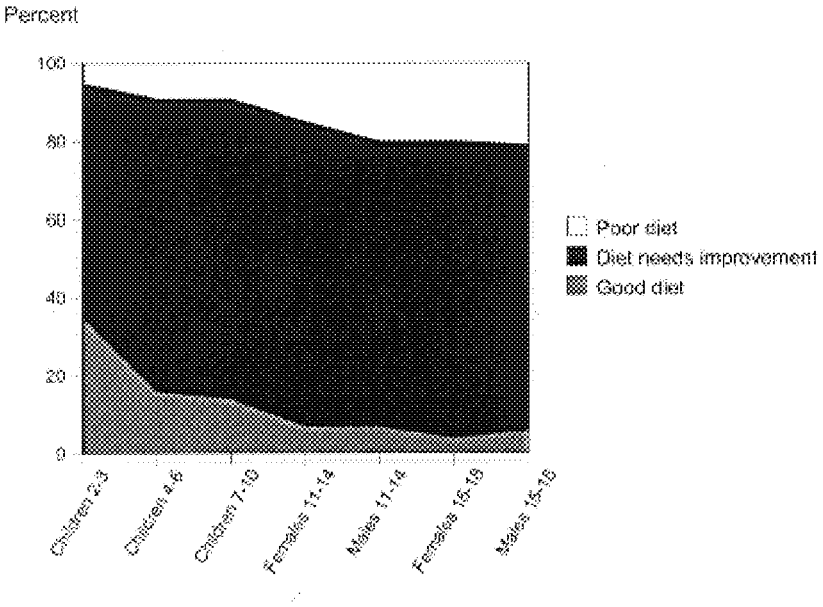
Components 1-5 measure the degree to which a person's diet conforms to USDA's Food Guide Pyramid serving recommendations for the five major food groups: Grains (bread, cereal, rice, and pasta), vegetables, fruits, milk (milk, yogurt, and cheese), and meat (meat, poultry, fish, dry beans, eggs, and nuts). Component 6 measures total fat consumption as a percentage of total food energy (calorie) intake. Component 7 measures saturated fat consumption as a percentage of total food energy intake. Components 8 and 9 measure total cholesterol intake and total sodium intake, respectively. And component 10 measures the degree of variety in a person's diet.

Each component of the Index has a maximum score of 10 and a minimum score of zero. Intermediate scores are computed proportionately. High component scores indicate intakes close to recommended ranges or amounts; low component scores indicate less compliance with recommended ranges or amounts. The maximum combined score for the 10 components is 100. An HEI score above 80 implies a good diet; an HEI score between 51 and 80 implies a diet that needs improvement; an HEI score less than 51 implies a poor diet.

Healthy Eating Index: Overall and Component Scores

Most children have a diet that needs improvement or is poor (figure). As children get older, their overall HEI score declines (table). Consequently,

Healthy Eating Index rating by children's age group, 1994-96



Healthy Eating Index: Overall and component mean scores for children, 1994-96 (percent of children meeting the dietary recommendations for each component in parentheses)

	Children 2-3	Children 4-6	Children 7-10	Females 11-14	Males 11-14	Females 15-18	Males 15-18
Overall HEI score	**73.8**	**67.8**	**66.6**	**63.5**	**62.2**	**60.9**	**60.7**
1. Grains	8.3 (54)	7.2 (27)	7.6 (31)	6.7 (16)	7.2 (29)	6.3 (17)	7.5 (34)
2. Vegetables	5.9 (31)	4.9 (16)	5.1 (20)	5.5 (24)	5.4 (23)	5.8 (26)	6.3 (35)
3. Fruits	7.0 (53)	5.3 (29)	4.3 (18)	3.9 (14)	3.5 (9)	3.1 (12)	2.8 (11)
4. Milk	7.2 (44)	7.4 (44)	7.6 (49)	5.2 (15)	6.2 (27)	4.2 (12)	6.1 (28)
5. Meat	6.3 (28)	5.3 (14)	5.5 (17)	5.7 (15)	6.5 (28)	5.8 (21)	6.9 (36)
6. Total fat	7.4 (40)	7.3 (38)	7.2 (35)	7.2 (37)	6.8 (33)	7.1 (38)	6.8 (34)
7. Saturated fat	5.4 (27)	5.6 (28)	5.7 (28)	5.8 (31)	5.7 (32)	6.6 (42)	6.0 (35)
8. Cholesterol	9.0 (83)	8.9 (83)	8.7 (80)	8.5 (78)	7.6 (69)	8.4 (77)	6.7 (58)
9. Sodium	8.8 (64)	8.1 (53)	6.8 (34)	7.1 (39)	5.2 (21)	6.9 (37)	3.7 (15)
10. Variety	8.4 (64)	7.9 (53)	8.1 (54)	7.8 (51)	8.1 (58)	6.7 (37)	7.8 (51)

the percentage having a good diet declines, and the percentage having a diet that needs improvement or is poor increases (figure). For children ages 2 to 3, 35 percent have a good diet, and 5 percent have a poor diet. For males 15 to 18 years old, only 6 percent have a good diet, and 21 percent have a poor diet. Much of the decline in diet quality for children occurs between the age groups 2 to 3 and 4 to 6. During this period, the percentage of children having a good diet falls from 35 to 16 percent, and the percentage having a diet that needs improvement rises from 60 to 75 percent. There is also a noticeable decline in diet quality between the 7 to 10 and 11 to 14 age groups, with the percentage of children having a good diet falling from 14 to 7 percent.

The decline in children's diet as they get older is linked to declines in their fruit and milk component scores of the HEI. The average fruit score falls from 7.0 for children ages 2 to 3 to 3.1 for females and 2.8 for males ages 15 to 18. Only 11 to 12 percent of these older children meet the dietary recommendation for fruit (table). The milk group score increases as children get older, until ages 7 to 10, where it peaks at 7.6. It then declines considerably. Females ages 15 to 18 have a particularly low milk score—4.2. Only 12 percent of these girls meet the dietary recommendation for milk servings.

Although children ages 2 to 3 have the best total fat score, only 40 percent meet the dietary recommendation. Males ages 11 to 18 have the lowest fat score: 6.8, and about one-third meet the dietary recommendation. Children ages 2 to 3 and 4 to 6 have the lowest scores for saturated fat at 5.4 and 5.6, respectively, with 27 to 28 percent meeting the dietary recommendation. Females ages 15 to 18 have the best saturated fat score at 6.6. But, only 42 percent meet the dietary recommendation.

Cholesterol and sodium scores are relatively good for preschoolers, with most of these children meeting the dietary recommendations. The cholesterol score declines steadily as children get older. It falls from 9.0 for children ages 2 to 3 to 6.7 for males ages 15 to 18. Females ages 11 to 18 have higher cholesterol scores than do their male counterparts. The cholesterol component is the only HEI component for which the majority of children in all age groups meet the dietary recommendation of 300 milligrams or less of dietary cholesterol each day. However, males ages 15 to 18 need to work harder to meet this goal because only 58 percent meet this guidance. The sodium score also declines as children get older. The sodium score averages 8.8 for children ages 2 to 3 and declines to 6.9 for females and 3.7 for males ages 15 to 18. Only 15 percent of males ages 15 to 18 meet the recommendation of 2,400 milligrams or less of sodium each day.

Conclusion

The diet of most children needs substantial improvement in order to meet the dietary recommendations with respect to fruits, vegetables, and milk products. Both teenage girls and boys are particularly deficient in their consumption of fruits and milk. Twelve percent or less of adolescents ages 15 to 18 meet the dietary recommendation for fruits. Only 12 percent of girls ages 15 to 18 meet the dietary recommendation for milk. And males ages 11 to 18 need to decrease their sodium intake.

This *Nutrition Insight* provides a better understanding of the types of dietary changes needed to improve children's eating patterns. Nutrition professionals may use these results to tailor their nutrition education programs aimed at improving children's dietary habits.

Note: For additional results and more details on the Healthy Eating Index and how it is computed, the reader should see Bowman, S.A., Lino, M., Gerrior, S.A., and Basiotis, P.P. 1998. *The Healthy Eating Index: 1994-96.* U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. CNPP-5. Available at *http://www.usda.gov/cnpp.*